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10/037,337	12/21/2001	Richard L. Copeland	C4-599	5844

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EXAMINER
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LEE, BENJAMIN C

ART UNIT	PAPER NUMBER
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2632

DATE MAILED: 11/07/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/037,337

Applicant(s)

COPELAND ET AL.

Examiner

Benjamin C. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5. 6) ☐ Other:

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## **Response To Amendment**

### **Claim Status**

1. Claims 1-22 are pending.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 16-18** are rejected under 35 U.S.C. 102(b) as being anticipated by Davies et al. (US pat. #5,345,222).

1) In considering claims 16-18, Davies et al. disclosed all of the claimed subject matter:

--the claimed antenna for use in an electronic article surveillance system (Figs. 5 & 8, and col. 1, lines 6-11), comprising: a core comprising a central member disposed between first and second outer members that are of equal length but are shorter than the central member are met by the relationship between 54, 53 and 51 in Fig. 5.

### ***Claim Rejections - 35 USC § 103***

4. **Claim 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over Davies et al.

1) In considering claim 19, Davies et al. disclosed all of the claimed subject matter, except:

--the claimed about 30 Cm for the first and second lengths for the outer members and about 50 Cm for the third length for the central member.

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It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to choose various dimensions of the outer and central members in an antenna construction and housing such as taught by Davies et al., including about 30 Cm for the first and second lengths for the outer members and about 50 Cm for the third length for the central member, based on the particular antenna size and antenna housing design desired for specific application and application environment.

5. **Amended claims 1-3, 11-15 and 20-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Davies et al. in view of Yoshizawa et al. (US pat. #5,567,537).

1) In considering amended claim 1:

a) Davies et al. teaches that in electronic article surveillance systems (EAS) (col. 1, lines 6-11 and Fig. 8) solid cored coil antennas have advantages over air cored coil antennas such as lower overall size and considerably more confined magnetic flux (col. 1, line 12 to col. 2, line 6), and furthermore that such solid cored coil antennas can be used for interrogation as well as detection of EAS tags (col. 2, lines 50 & 62 and col. 5, lines 31-33), wherein specifically the antenna (Figs. 1, 5, 8) comprises a core (53 & 54 of Fig. 5) of elongate solid rectangular shape having first and second ends, the core is made of suitable materials of suitable effective relative magnetic permeability (col. 1, line 67 to col. 2, line 6 and disclosure corresponding to Fig. 5), and a coil winding of wire (51 of Fig. 5) disposed around at least a portion of the core (Fig. 5), said coil winding of wire insulated from said core (inherent in embodiment of Fig. 5), said core and coil winding being of a minimum size for generation of an electromagnetic field for interrogation and detection of EAS markers (col. 1, lines 53-54, wherein the antenna size is minimized as compared to an air core type coil antenna);

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b) Yoshizawa et al. teaches a solid cored coil antenna in an interrogation-response system using a core formed by a plurality of amorphous alloy ribbons insulated from each other and stacked to form a substantially elongated solid rectangular shape having first and second ends, with a coil winding of wire disposed around at least a portion of the core and insulated from the core, provides for an antenna of minimum size for generation of a given electromagnetic field having characteristics for effective interrogation as compared to convention coils (air-core type coils) (Figs. 1-3 and corresponding disclosure), and that such an antenna provides improved performance while minimizing size (Abstract, whereby such a solid cored coil antenna enables even smaller dimensions of the antenna for a particular performance rating than that provided by the Davies et al. core material according to col. 2, lines 4-6).

In view of the teachings by Davies et al. and Yoshizawa et al., it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use the specific type of core material and coil antenna construction such as taught by Yoshizawa et al. for implementing the interrogation/detection coil antenna of a system such as taught by Davies et al. in order to provide the intended antenna function but at a minimized size, wherein such minimized antenna size is desirable in various EAS applications by minimizing the physical presence, and thereby the associated physical and psychological intrusiveness and unsightliness of the system in typical application environments such as business establishments.

2) In considering claims 2-3, Davies et al. and Yoshizawa et al. made obvious all of the claimed subject matter as in amended claim 1, wherein:

--while Davies et al. and Yoshizawa et al. did not specify the same core dimensions (about 75 cm long, about 2 cm wide) and the number (about 60) of ribbons and each of their

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thickness (about 23 microns), and the wire gauge (24-gauge) and number of turns (90) for the coil as claimed, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention that the electromagnetic interrogation field generated from the interrogation antenna in a system such as taught by Davies et al and Yoshizawa et al. depends on a variety of parameters including the antenna driving current, the gauge, length and conductivity of the coil wire as well as the number of turns for the coil, and the magnetic characteristics of the core including specific composition, dimensions and size of the core, and furthermore the desired interrogation field depends on the intended/expected size and dimension of the interrogation zone as well as the response characteristics of the marker. Therefore, the core dimensions, the number of ribbons and each of their thickness, the wire gauge and number of turns of the antenna coil only account for some of the parameters for designing a particular intended application of a system such as taught by Davies et al. and Yoshizawa et al., and that such parameters can be chosen, including using the claimed parameter specification, in achieving the intended interrogation characteristics without unexpected results.

3) In considering claim 11, Davies et al. and Yoshizawa et al. made obvious all of the claimed subject matter as in amended claim 1, including:

--the claimed Q value of the antenna of less than or equal to about 20 at an EAS operating frequency (Fig. 3 of Yoshizawa et al., whereby a Q value of about 20 or less correspond to an interrogation frequency of about 50 kHz or less, which one skilled in the art at the time of the claimed invention would have readily recognized that operating frequency can be selected as the EAS operating frequency of choice based on factors such as frequencies already operating in the environment of application, FCC regulations, the type of marker used, user preference, etc.).

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4) In considering claims 12-14, Davies et al. and Yoshizawa et al. made obvious all of the claimed subject matter as in the consideration of amended claim 1, including:

--the claimed core of stacked amorphous alloy ribbons includes a central member inserted at its center so that the stacked ribbons form first and second outer members that are of equal length but are shorter than the central member are met by the relationship between 54, 53 and 51 in Fig. 5 of Davies et al. as a specific housing structure for mounting to the antenna housing of Fig. 8 of Davies et al.

5) In considering claim 15, Davies et al. and Yoshizawa et al. made obvious all of the claimed subject matter as in claim 14, wherein:

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to choose various dimensions of the outer and central members in an antenna construction and housing such as taught by Davies et al. and Yoshizawa et al., including about 30 Cm for the first and second lengths for the outer members and about 50 Cm for the third length for the central member, based on the particular antenna size and antenna housing design desired for specific application and application environment.

6) In considering claims 20-21, Davies et al. and Yoshizawa et al. made obvious all of the claimed subject matter as in the consideration of amended claim 1.

7) In considering claim 22, Davies et al. and Yoshizawa et al. made obvious all of the claimed subject matter as in claim 20, plus the consideration of claim 14.

6. **Amended claims 5-8 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Davies et al. in view of Yoshizawa et al. and Balch et al. (US pat #6,118,378).

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1) In considering claims 5-6, Davies et al. and Yoshizawa et al. made obvious all of the claimed subject matter as in amended claim 1, while:

--Balch et al. teaches the claimed electronic controller (88, 100) and switching transmitting/receiving arrangement operating in sequential pulsed mode (Figs. 3-4) as a known marker interrogation system using antennas for both transmitting and receiving (i.e. interrogation and detection).

Davies et al. and Yoshizawa et al. teaches a marker interrogation system in which an antenna is used for interrogation and detection of a tag, without further specifying the interrogation/detection circuitry including antenna control circuitry, while Balch et al. teaches using the claimed features in the control aspect of the interrogation/detection system. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use the known control circuitry such as taught by Balch et al. for the complete implementation of a marker interrogation/detection system such as that taught by Davies et al. and Yoshizawa et al. without unexpected results.

4) In considering amended claims 7-8, Davies et al., Yoshizawa et al. and Balch et al. made obvious all of the claimed subject matter as in the consideration of amended claims 1 & 5, plus the plurality of antennas shown in Fig. 4 of Balch et al., and the claimed first and second antennas selected by the controller to operate in respective transmit only and receive only modes are met by the selective sequential operation description of Figs. 3-4 of Balch et al.

5) In considering claim 10, Davies et al., Yoshizawa et al. and Balch et al. made obvious all of the claimed subject matter as in the consideration of claim 7.



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7. **Amended claims 7-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Davies et al. in view of Yoshizawa et al. and Martinides (US pat #5,371,490).

1) In considering claim amended claims 7-9, Davies et al. and Yoshizawa et al. made obvious all of the claimed subject matter as in the consideration of claim 1, while:

-- Martinides teaches electronic article surveillance system components (Abstract and Fig. 1) not specified by Davies et al. and Yoshizawa et al., having the claimed electronic controller and plurality of antennas (4 and antennas in Fig. 1) and transmitter and receiver means operating in non-pulsed mode (Abstract and Fig. 1, wherein no pulsed mode operation was disclosed, making the system inherently non-pulsed), and the claimed first and second antennas selected by the controller to operate in respective transmit only and receive only modes are met by the sequential operation description of Fig. 1.

Davies et al. and Yoshizawa et al. teaches a marker interrogation system in which an antenna is used for interrogation and detection of a tag, without further specifying the interrogation/detection specifics including the number of antennas used and their control circuitry, while Martinides teaches using the claimed features in the control aspect of the interrogation/detection system. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use the known control circuitry and multiple use of antennas such as taught by Martinides for the complete implementation of a marker interrogation/detection system such as that taught by Davies et al. and Yoshizawa et al. to cover multiple zones.

3) In considering claim 10, Davies et al., Yoshizawa et al. and Martinides made obvious all of the claimed subject matter as in the consideration of claim 7.

***Allowable Subject Matter***

8. **Amended claim 4** is allowed

***Response to Arguments***

9. Applicant's arguments with respect to claims 1-3 and 5-22 have been considered but are moot in view of the new ground(s) of rejection.

-- The above new grounds of rejection (e.g. based on new combination) has been adopted to address some of Applicant's arguments, including the use of Davies et al. as a primary reference (for claim 1, etc.) that uses a solid cored coil antenna in an EAS system interrogation/detection system. Yoshitzawa et al. is used to show that a known alternative core material can be used and thus substitutes the core material of the antenna of Davies et al. to provide for an antenna of minimized size/dimensions. Please refer to above rejection based on new grounds of rejection for complete detail.

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1) Drucker et al., US pat. #5,327,118

--A known use of antenna switching control.

2) Urbanski, US pat. #4,658,263

--A similar elongated solid cored coil antenna.

3) Crossfield et al., US pat. #5,459,451

--A similar use of EAS elongated coiled antenna.

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4) Elder, US pat. #3,765,007


--A similar use of elongated solid cored coil EAS interrogation antenna.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin C. Lee whose telephone number is (703) 306-4223.

The examiner can normally be reached on Mon -Fri 11:00Am-7:30Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on (703) 308-6730. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-8576.

  
Benjamin C. Lee  
Primary Examiner  
Art Unit 2632

B.L.  
11/2/03